



## Utah Department of **NATURAL RESOURCES**

### FOR IMMEDIATE RELEASE

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### **Weekly Drought Update for the Week of June 27**

**Salt Lake City** (June 30, 2021) – Last week’s slightly cooler temperatures and scattered showers were a nice reprieve from triple-digit temperatures, but unfortunately, it didn’t improve drought conditions. Reservoir levels and stream flows continue to decline and are unlikely to improve until after the irrigation season concludes and winter precipitation (hopefully) starts to fall. The Utah Divisions of Water Resources and Water Rights are closely monitoring and responding to conditions. The following measurements and information from the week of June 27 provide context to Utah’s current drought conditions, water storage, stream flows and water rights allocation.

“With less water in our streams and reservoirs, Utah is currently relying on stored water from past years. As a state and as communities and neighborhoods, we can do our part to conserve water by using less on our lawns and landscapes,” said Utah Department of Natural Resources Executive Director Brian Steed. “Our reservoir levels are lower now than they were last fall when the irrigation season was ending. That’s alarming since our highest water use traditionally happens from July through September.”

#### **At-a-glance changes for the week:**

- According to the latest information [released](#) by the U.S. Drought Monitor, drought conditions worsened statewide with 92% of the state experiencing “extreme” or “exceptional” drought conditions, compared to 90% the previous week. Extreme and exceptional drought conditions are the Drought Monitor’s most serious categories.
- Soil moisture improved slightly and is now 11% drier than average compared to 12% announced last week. This is a result of slightly above-normal precipitation last week.
- Streamflow statewide continues to decline, which means less water is getting to reservoirs. As a result, 71 (64 reported last week) of Utah’s 96 streams reporting data are



flowing below normal. Utah streams are currently flowing below the previous minimum daily flow record.

- Reservoir storage continues to be a concern as storage decreased from 63% last week to 61% this week. Twenty-three (21 last week) of Utah's largest 42 reservoirs are below 55% of available capacity. Stateline Reservoir in northeast Utah and Grantsville Reservoir dropped below 55% this week.
- The natural flow and percent of direct flow water rights on the portions of the river systems illustrated below continue to decrease. Most water rights across the state have experienced earlier than normal curtailment.
- The Great Salt Lake is now about three inches from its historic low recorded in 1963.

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## **REPORT: WEEK OF JUNE 27**

### **Precipitation and soil moisture**

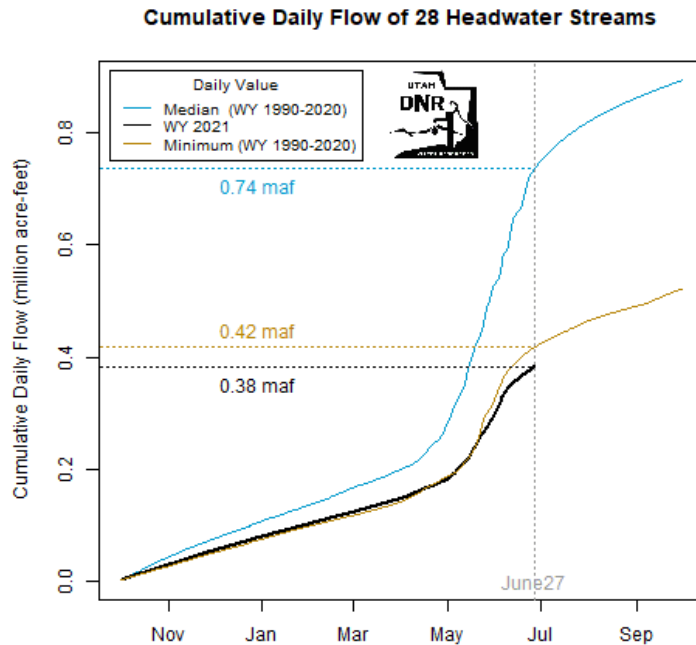
Despite some welcome precipitation, Utah's drought conditions continue to intensify.

- Air temperatures for the week were 5.6 degrees Fahrenheit above average, down from 9.4 degrees Fahrenheit above average last week.
- On average, the state experienced slightly above-normal precipitation during the last week by approximately 0.03 inches (7-day departure from average). The precipitation did little to alleviate the extreme drought conditions.
- Soils are 11% drier than average, with soil moisture for June 26 at 39.2% saturation, compared to an average of 49.9% saturation.

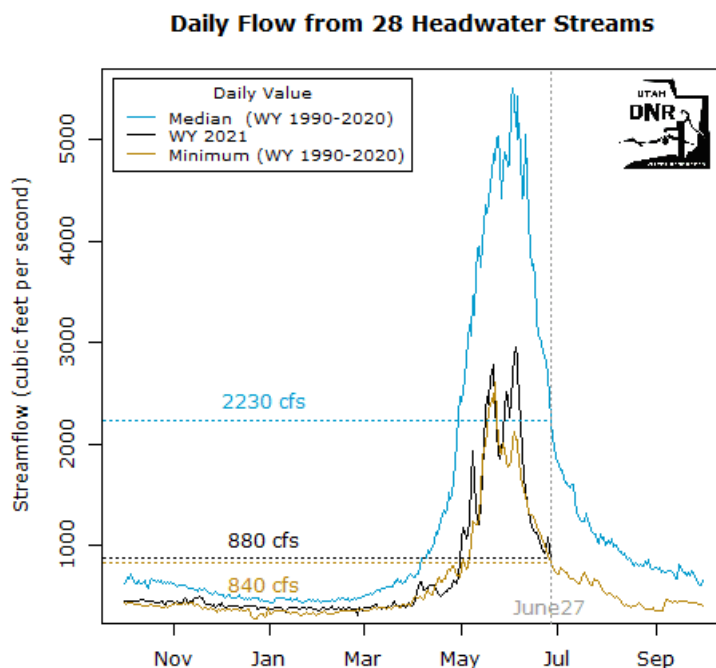
### **Streamflows**

Record dry soils reduced the effectiveness of a disappointing snowpack. As a result, streams statewide are flowing at less than 50% of normal, which means less water is getting to reservoirs.

- Seventy-one (64 reported last week) of Utah's 96 streams reporting data are flowing below normal. This is an increase of seven from the previous week.
- Seven streams are flowing at their lowest levels ever recorded. This is a decrease from 14 streams flowing at record low levels last week.



a.) The flows for 28 headwater streams were added together to show how Utah's water supply is being affected. This chart shows the Water Year (WY) from October to September for the median year (1990-2020) (blue line), the minimum year (mustard line) during that time period and this year (black line).



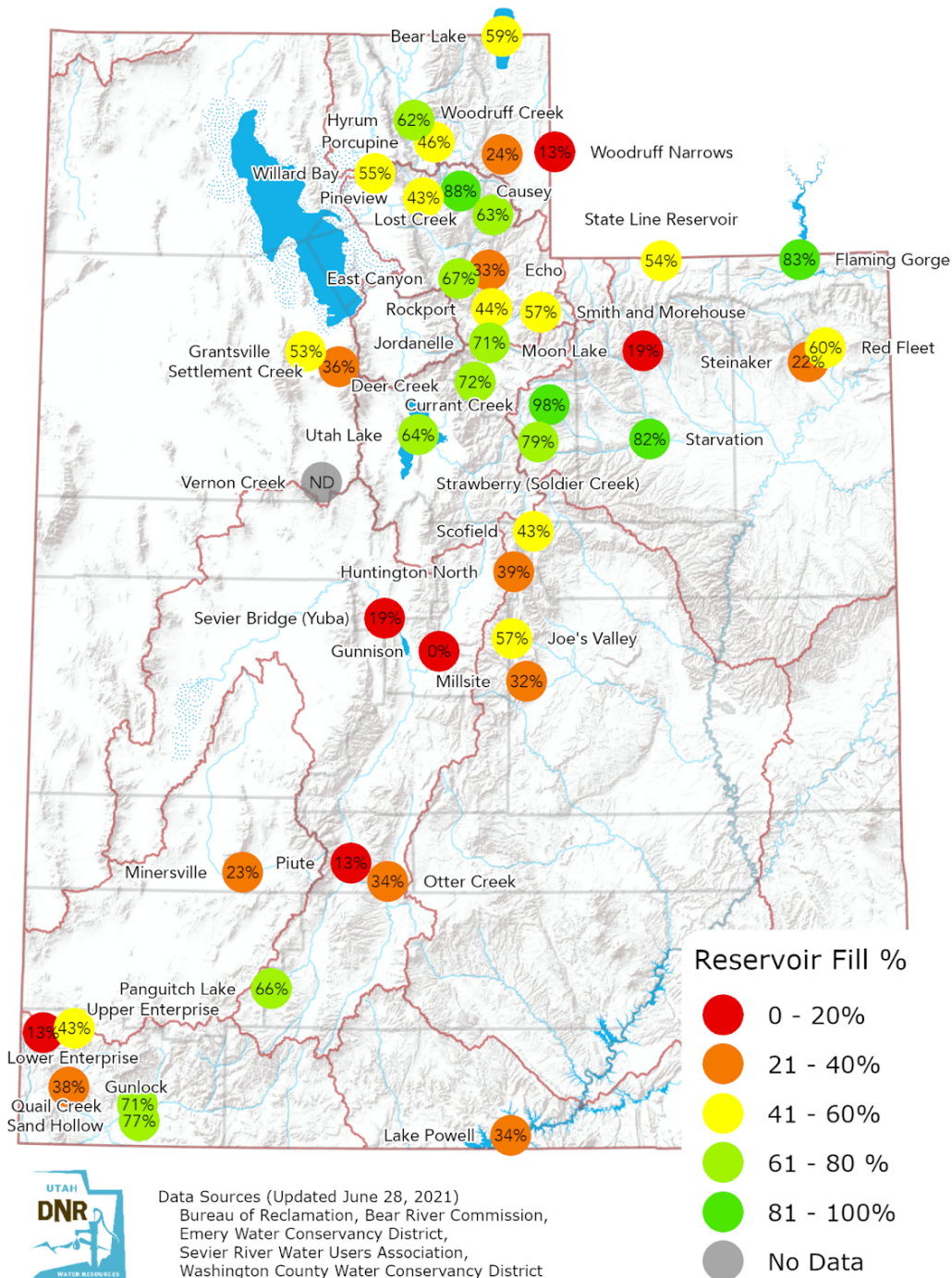
b.) The flows for 28 headwater streams were added together to show how the daily stream flows range giving state perspective. This chart shows the Water Year (WY) from October to September for the median year (1990-2020) (blue line), the minimum year (mustard line) during that time period and this year (black line). **Utah streams are below the previous minimum daily flow record.**

### Reservoir and Lake Levels

About 95% of Utah's water comes from snowpack. This state-wide average ranges from around 75% in the southwest corner to over 95% in the northern part near the Weber Basin headwaters. Different-sized reservoirs are located throughout the state to catch and store runoff. Small reservoirs store about one year's worth of water, while larger reservoirs, like Strawberry or Jordanelle, store several year's worth. Reservoir storage helps to prevent water shortages and is dependent on snowpack and runoff.

- Major reservoirs statewide are currently 61% of available capacity.
- 23 of 42 of our largest reservoirs are below 55% of available capacity.

- On average, current reservoir levels are below September 2020 levels toward the end of the irrigation season. The majority of Utah's watering season is ahead of us, which makes these levels concerning.
- Several Bureau of Reclamation reservoirs are below any previous storage and elevation level in the last 30 years, including Lake Powell, Rockport, Echo and Steinaker.
- The Great Salt Lake's current elevation is 4,191.7 feet, about three inches from its historic recorded low level (4191.4 feet) documented in 1963.



## **Drought Effects on Priority Distribution of Water Rights in Utah (updated June 24)**

Water rights are distributed by the state engineer with priority going to the earliest rights. For example, a water right established in 1889 is entitled to receive its full flow before water rights established in 1890 or later can receive any water. This principle is called the “Prior Appropriation Doctrine” or “first in time, first in right.” The earliest water rights in Utah are called “direct flow” rights, meaning they cannot be stored. Storage reservoirs were built later on so storage rights generally have priority dates later than direct flow rights, although some “high” water rights (direct flow rights with late priority dates) exist.

While some water rights are owned by public water suppliers, others are held by individuals like farmers and ranchers. Priority distribution happens every year, not just during droughts, and occurs irrespective of the type of use. Most water rights are fully or partially curtailed by mid-summer when the natural flow of a stream drops following spring runoff. The term “natural flow” refers to the total supply of a stream, which is generally different from the flow of the stream at any particular point.

Natural flow on complex systems is determined using accounting models developed by the Division of Water Rights. When the natural flow is greater than 100% of the direct flow rights, water can be stored on the system. When the natural flow drops below 100% of the direct flow rights, these rights are reduced according to priority date. Storage, if available, can be released to make up all or part of the deficit. The amount of storage available on each system is a function of the specific projects developed on the system over the last hundred-plus years. This year has seen an early decrease in natural flow because of very little spring runoff. In previous years systems were generally storing water in mid-June, sometimes in considerable amounts, while 2021 is already seeing some of the earliest water rights being curtailed.

While statewide there are many different river systems, the information below highlights water rights priorities, natural flow and direct flow on just four of them. CFS below stands for cubic feet per second.

**Middle Bear River** – Priorities: Direct Flow (1860 - 1909), Storage (1911), High Rights (1914 - 1989)

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
June 24, 2019	1989	3,612 cfs	259%
June 24, 2020	Storage	1,456 cfs	105%
June 24, 2021	1889	185 cfs	13%

- The water supply on the Logan River, tributary to the Middle Bear, is third lowest on record out of 58 years (1977 and 1992 were lower) according to the Colorado Basin River Forecast Center (CBRFC) Water Supply Forecast (Station LGNU1).
- Currently, only 13% of the direct flow water rights are being met with earliest priority rights being fulfilled from 1860 to 1889. Last week, 24% of the direct flow water rights were being met from the same priority.
- Natural flow continues to decrease. This week natural flow within the system is just 185 cfs as compared to 333 cfs reported last week.



**Upper Provo River – Priorities: Direct Flow (1<sup>st</sup> Class - 17<sup>th</sup> Class), Storage**

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
June 25, 2019	Storage	1,072 cfs	236%
June 25, 2020	12th Class	272 cfs	60%
June 25, 2021	50% 1 <sup>st</sup> Class	76 cfs	17%

- The water supply on the Provo River at Hailstone is the third lowest on record out of 67 years (1977 and 1961 were lower) according to the CBRFC Water Supply Forecast (Station PVHU1).
- Currently, only 17% of the direct flow water rights are being met, compared to 27 percent last week, consisting of only 50% of 1st Class rights, about 80% of 1st Class rights were being met last week
- Natural flows continue to decrease. This week natural flow within the system is just 76 cfs as compared to 121 cfs reported last week.

**Upper Duchesne River – Priorities: Direct Flow (1900 - 1964), Storage (1964)**

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
June 24, 2019	Storage	5,332 cfs	481%
June 24, 2020	Storage	796 cfs	72%
June 24, 2021	1910	225 cfs	20%

- The water supply on the Duchesne River at Randlett is the second-lowest on record out of 79 years (1977 was lower) according to the CBRFC Water Supply Forecast (Station DURU1).
- Currently, only 20% of the direct flow water rights are being met compared to 30% last week. The earliest priority rights have also been reduced from 1918 last week to 1910 this week.
- Natural flows continue to decrease. This week natural flow within the system is just 225 cfs as compared to 338 cfs reported last week.

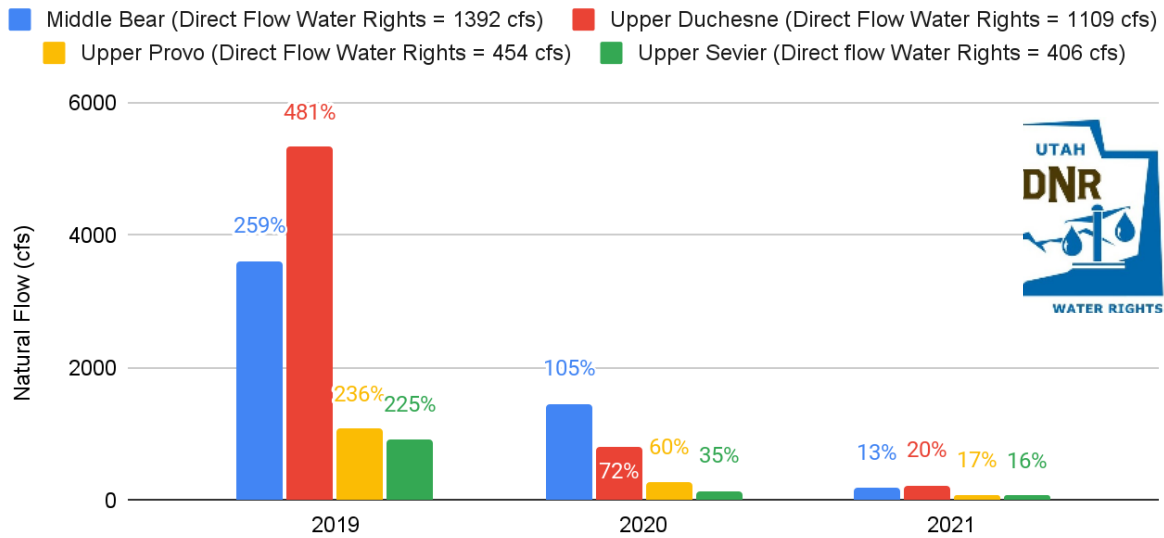
**Upper Sevier River – Priorities: Direct Flow (1<sup>st</sup> Class – 3<sup>rd</sup> Class), Storage**

<i>Date</i>	<i>Priority from River</i>	<i>Natural Flow</i>	<i>% Direct Flow Rights</i>
June 24, 2019	Storage	915 cfs	225%
June 24, 2020	49% 1 <sup>st</sup> Class	144 cfs	35%
June 24, 2021	22% 1 <sup>st</sup> Class	64 cfs	16%

- The water supply on the Sevier River at Piute is the third lowest on record out of 103 years (1957 and 1934 were lower) according to the CBRFC Water Supply Forecast (Station PIUU1).
- Currently, only 16% of the direct flow water rights are being met compared to 20% last week. The earliest priority rights have also been reduced from 34% of 1st Class rights last week to 22% this week.
- Natural flows continue to decrease. This week natural flow within the system is just 64 cfs as compared to 82 cfs reported last week.

## Natural Flow Distribution on Four River Systems (June 25)

Percent Values Greater than 100 Indicate Water Being Stored



### Well Replacements

In addition to surface water rights, the state engineer oversees the appropriation of groundwater and construction of groundwater wells. A water right may be approved to allow for the diversion of surface water, groundwater, or a combination of both surface and groundwater. Both surface and groundwater rights are also distributed under the priority system. As groundwater conditions change, well owners may need to replace their well. This may be due to issues of the existing well, or the need to drill deeper. When this happens a water user files either a replacement, or renovate application. In some cases, a change application may need to be filed. This is dependent on the individual status of the user's water right.

- So far this year there have been 76 total replacement and deepening requests made statewide. This is an increase of four from last week. If this trend holds, Utah will exceed its annual average well replacements in 2021.
- As a comparison, there were 113 in 2020 and 102 in 2019. The average annual count during the past five years is 107.